

Product Summary

- $V_{DS} = -30V$, $I_D = -4.1A$
 $R_{DS(ON)} < 55m\Omega$ @ $V_{GS} = -10V$
 $R_{DS(ON)} < 85m\Omega$ @ $V_{GS} = -4.5V$
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Lead free product is acquired

Application

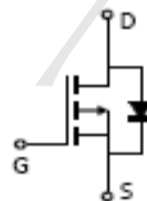
- PWM Applications
- Load Switch
- Power Management

Package and Pin Configuration

SOT-23



Circuit diagram



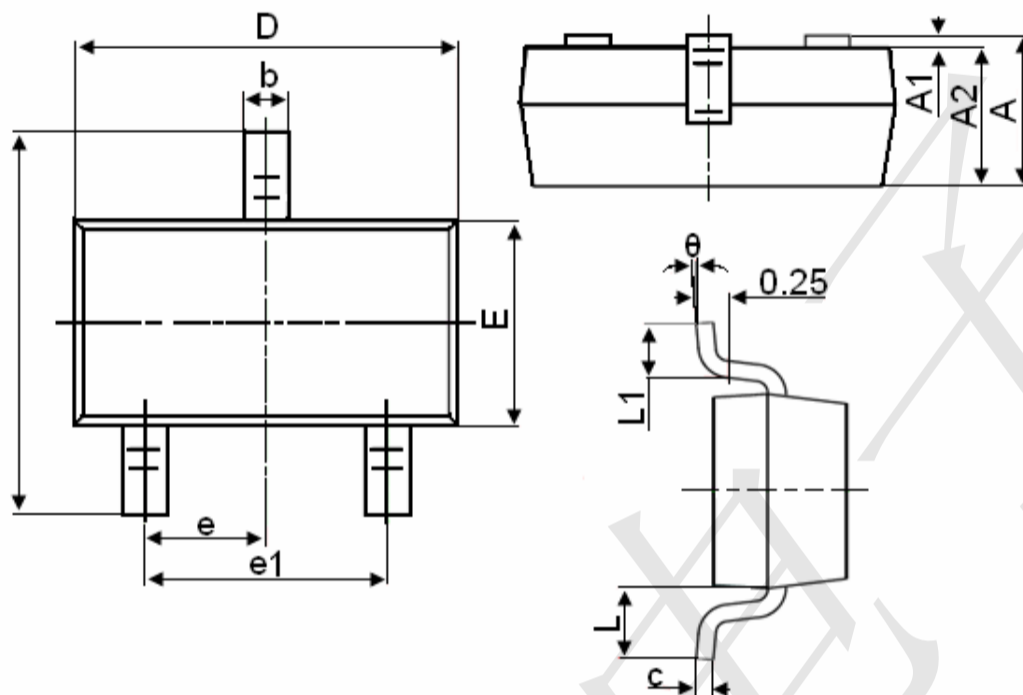
Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Symbol	Parameter		Max.	Units
V _{DSS}	Drain-Source Voltage		-30	V
V _{GSS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current	T _A = 25°C	-4.1	A
		T _A = 100°C	-2.7	A
I _{DM}	Pulsed Drain Current ^{note1}		-16.4	A
P _D	Power Dissipation	T _A = 25°C	1.51	W
R _{θJA}	Thermal Resistance, Junction to Ambient		83	°C/W
T _J , T _{STG}	Operating and Storage Temperature Range		-55 to +150	°C

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = -250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -30V, V _{GS} = 0V,	-	-	-1	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} = 0V, V _{GS} = ±20V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.5	-2.5	V
R _{DS(on)}	Static Drain-Source on-Resistance note2	V _{GS} = -10V, I _D = -4A	-	42	55	mΩ
		V _{GS} = -4.5V, I _D = -3A	-	62	85	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, f = 1.0MHz	-	580	-	pF
C _{oss}	Output Capacitance		-	98	-	pF
C _{rss}	Reverse Transfer Capacitance		-	74	-	pF
Q _g	Total Gate Charge	V _{DS} = -15V, I _D = -4.1A, V _{GS} = -10V	-	6.8	-	nC
Q _{gs}	Gate-Source Charge		-	1	-	nC
Q _{gd}	Gate-Drain("Miller") Charge		-	1.4	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} = -15V, I _D = -1A, V _{GS} = -10V, R _{GEN} = 2.5Ω	-	14	-	ns
t _r	Turn-on Rise Time		-	61	-	ns
t _{d(off)}	Turn-off Delay Time		-	19	-	ns
t _f	Turn-off Fall Time		-	10	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-4.1	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-16.4	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S = -4.1A	-	-0.8	-1.2	V

SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°